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ABSTRACT

The effects of social and family disruption from stress in the work place has caused the American Psychological Association to conclude that "American workers...constitute a work force more at risk than ever for psychological, physical, and behavioral health problems." The study explores what can be learned from successful coping and questions whether it negatively relates to stress. It also considers what can be learned about how people cope, and what available coping resources people have (including their coping thoughts and actions). Findings conclude that coping resources appear to be more predictive of burnout than coping processes; and having resources to draw upon in stressful situations appears to be negatively related to job burnout. (Includes 18 references and one table). (JDM)

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Work Stress, Burnout, and Coping
Brief Summary of An Exploratory Study

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Work stress leading to burnout has serious consequences for the health and happiness of workers and for the success of American corporations. A joint conference of the American Psychological Association and the National Institute for Occupational Safety and Health in March 1999 concluded that "American workers constitute a ...workforce more at risk than ever for psychological, physical and behavioral health problems" and that this has "...made for social and family disruptions" (McGuire, 1999, p. 1). The World Health Organization reported that roughly 75% of people seeking psychiatric help have symptoms that can be traced either to the lack of job satisfaction or to the inability to relax (Levi, 1990). The International Labor Organization (Swoboda, 1992) estimates that work stress costs businesses over $200 billion per year, and the Northwestern Life Insurance Company (1991) has referred to burnout as "America's newest epidemic."

The costs of burnout to organizations include increased sick leave leading to higher insurance rates, decreased job involvement leading to decreased productivity (Golembiewski, 1996), decreased worker morale and increased substance abuse, accidents on the job, turnover (Paine, 1984), and increased workplace violence (Labig, 1995). Costs to the individual worker include increased anxiety, depression, insomnia, hostility, chronic fatigue, mental withdrawal from others, loss of intrinsic motivation, and significant health problems (Golembiewski, Boudreau, Munzenrider, & Luo (1996).

Efforts to reduce burnout may be directed to organizational factors or to the resilience of workers. In this study we focused on four worker characteristics that are related to burnout: Coping resources, coping processes, worker involvement in the job, and the worker's perception of job conditions. Our research question was "To what extent are these characteristics related to the degree of job burnout experienced by workers?" We had reason to believe that successful coping would be negatively related to burnout. We wanted, however, to compare the ameliorative influences on burnout of available coping resources on the one hand and specific coping thoughts and actions on the other hand. The research is being carried out in two consulting firms, one in the U.S. and the other in Holland. Upon the completion of the data collection, results from both national sites will be compared to identify

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cultural factors that may influence the degree of burnout. In this report we are presenting data from the U.S. sample only as we are still collecting data from Holland.

Method

Sample

Employees of and engineering consulting firm in the southeastern part of the U.S. were the participants in this study. All employees were invited to participate, and volunteers appeared to be reasonably representative of the various administrative levels of the corporation. One hundred and twenty employees were given research packets and urged to participate. Of this number 104 agreed to participate. One participant failed the social desirability validity key on one of the instruments and was removed from the sample. Eight others failed the random guessing validity key on the same instrument and also were removed. The sample varied slightly from comparison to comparison due to incomplete responses. The sample size then was roughly 90 for most of the comparisons. Roughly 70% of the participants were males and 30% females across the various comparisons. Approximately 64% of the participants were white, 18% black, and the18% represented other racial groups. Roughly half were married, 37% never married, and 7% were divorced. Over 80% had either bachelors degrees or graduate degrees. Roughly 80% had salaries between 20,000 and 75,000 dollars.

Procedures

The research was submitted to the Institutional Review Board for the Protection of Human Subjects and received its approval. Employees received a letter from the president of the company endorsing the research effort. This letter was followed up by the distribution of a research packet to all 120 employees. The packet contained letter inviting participation from the researchers and the company's Director of Human Resources, a consent form, a battery containing all five instruments and instructions for completing them, and appropriate answer sheets. Participants were requested to use an I.D. number of their choice, to complete the instruments on their own time and to return them within two weeks if possible. After three written requests from the Director of Human Resources, the last research packet was returned at the end of a six week period. Upon receipt of the research packets, the data were entered into SPSS (version 8) data files and analyzed.

Instruments

The participants completed five instruments, all assembled into one battery. The instruments were used to measure the five constructs: Coping resources, coping processes, job involvement, perception of job conditions, and burnout. The following is a brief description of each instrument and its psychometrics.

Coping Resources Inventory for Stress (CRIS) (Matheny, Curlette, Aycock, Pugh, & Taylor, 1981, 1987). The CRIS was selected to measure the perceived coping resources of respondents. The CRIS is a 280 item, true or false, inventory measuring the following 15 coping resources: Self-Disclosure, Self-Directedness, Confidence, Acceptance, Social Support, Financial Freedom, Physical Health, Physical Fitness, Stress Monitoring, Tension Control, Structuring , and Problem Solving. Measures of internal consistency for the scales range from .84 to .975. Test-retest reliability for the scales range from .76 to .95. A large number of studies have been conducted to estimate the validity of the CRIS across a wide range of human problems and conditions. The CRIS can be given by test booklet or by personal computer. A computer-generated interpretive report is available to researchers and clinicians. The test has been translated into seven languages and is currently being used in several countries.

The Ways of Coping Questionnaire (WAYS) (Folkman & Lazarus, 1985). The WAYS was selected to measure coping processes (as distinct from coping resources or styles). The instrument measures the respondent's coping thoughts and actions in a specific stressful situation. Consequently, it is a measure of the state of respondents rather than a measure of their traits. It has 66-items with a Likert scale format. The eight scales measured are Confrontive Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving, and Positive Reappraisal. Internal consistency measures for the eight scales range from .61-.79. Because it is a state test, test- retest reliability is considered inappropriate. The authors suggest that the WAYS has both face validity and construct validity.

The Job Descriptive Index (JDI) and *Job in General Scale* (Balzer, Kihm, Smith, Irwin, Bachiochi, Robie, Sinar, & Parra, 1997). The purpose of the index is to measure levels of job satisfaction regarding five work areas and an overall level of job satisfaction.. The JDI has six scales, four with 18 items each and two with nine items. The work areas evaluated are Work on the Present Job, Pay, Opportunities for Promotion, Supervision, People on Your Present Job, and Job in General. Measures of internal consistency for the six scales range from .86 to .92. Both construct and concurrent forms of validity are reported for the instrument.

The Job Involvement Scale (JIS) (White & Ruh, 1973). The JIS is a 9-item, Likert style scale, adapted and revised by White and Ruh from the work of Lodahl & Kejner (1965). It measures the amount of positive personal involvement one feels with one's work. Internal consistency for the scale is given as .87 (White & Ruh, 1973).

The Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986). The MBI is a measure of three dimensions of burnout: Depersonalization, Personal Accomplishment (reversed), and Emotional Exhaustion. This instrument was revised by Golembiewski and Munzenrider (1988) for research purposes. The internal consistency measures for the three dimensions are as follows: Depersonalization, a coefficient alpha of .76; Personal Accomplishment (reversed), a coefficient of .72; and Emotional Exhaustion, a coefficient alpha of .86. The Total Score has a coefficient alpha of .86. The revised version uses a 7-point Likert scale format. The degree of burnout is designated by high and low assignments on each sub-domain. Validity studies have correlated inventory measures with ratings of the worker's burnout by family members and working peers, the presence of job characteristics that were expected to contribute to burnout, and other measures related to burnout as well..

In this study we used the version of the MBI created by Golembiewski and Munzenrider (1988). Golembiewski concluded that MBI scores would be more useful if arranged into phases based on the intensity of the burnout experienced. He maintained that the MBI sub-domains of depersonalization, reduced personal accomplishment, and emotional exhaustion are progressively detrimental in the order given. He further suggested that progression through the eight phases is associated with increasing virulence. Golembiewski, Boudreau, Munzenrider, and Luo, (1996) suggested that different phases of burnout might respond to different ameliorative efforts (p. 33). The eight phases are designated by high-low combinations of the three subdomains, using median sub-scale scores to set cut points for high and low designations (Golembiewski & Munzenrider, 1984).

Statistical Analysis

The data were analyzed through the use of correlational matrices, one-way ANOVAs and discriminant analysis. Our major interest was to determine the usefulness of the independent variables in predicting membership in the three groups formed by collapsing the eight phases. Golembiewski's phases 1, 2 and 3 became Group 1. Phases 4 and 5 became Group 2, and Phases 6, 7, and 8 became Group 3.. Golembiewski et al. (1996) had found that the eight phases could be meaningfully collapsed into three groups for research purposes when there is a small *n* or phases with few respondents.

Results

Correlations of Sub-Scales and Tests

The correlational tables allow for inspection of the relationships of scales within a test and the relationships of the five tests with one another. These relationships are presented in tabular form.

Mean Differences Between Burnout Groups 1, 2 and 3

The significance of mean differences for burnout groups 1 - 3 for each of the independent variables was tested using one-way ANOVAs. Group 1 consisted of participants with the lowest scores on the MBI. Group 2 participants had intermediate scores; and Group 3 participants had the highest scores. The mean score differences of participants in Groups 1, 2 and 3 were significantly different ($p < .05$) on seven of the 12 CRIS scales. The seven scales were Self-Directedness, Confidence, Acceptance, Social Support, Financial Freedom, Physical Health, and Problem Solving. Groups 1, 2 and 3 also had significant ($p < .01$) mean differences on five of the six scales on the JDI, but on only one of the eight scales on the WAYS ($p < .05$).

Discriminant Analysis

Discriminant analysis was used to predict membership in each of the three groups of collapsed phases of burnout. Because of the limited sample, variables for each of the four predictor tests were screened for their promise as predictor variables before the discriminant analysis was run. Weiner and Dunn (1966) studied the problem of variable selection with two groups having 50 observations in each group and 25 predictor variables. According to Lachenbruch (1975), their results indicate "Use of the t test is a simple means of ranking and seems quite satisfactory for constructing discriminant functions based on a small number of variables" (p.76). Carpenter, Strauss, and Bartko (1973) also support initial screening based on t-tests prior to running a discriminant analysis. Discussing the variable selection issue in regression (which is equivalent to discriminant analysis in the two group problem), Neter and Waserman (1974) state "the entire variable-selection process is pragmatic, with large doses of subjective judgment" (p. 372).

Because of the number of predictor variables relative to sample size, we employed variable screening prior to building a discriminant model using a stepwise procedure. One way to decide on the variables to include in a discriminant model is based on looking at the potential predictor variables in terms of domains. Jain and Dubes (1978) as reported in Hand (1981) support a conceptual two stage process which involves first dividing "the variables into mutually exclusive subsets such that the variables in the same subset are similar to each other and

different from those in other subsets" and then reducing "each subset to a single representative variable" (p. 153). For this study, we postulated each instrument as representing one possible domain. The initial variable screening rule was to take the largest F value from the comparison of means for the three groups when more than one scale from a measuring instrument was available. After these variables were selected, a second variable from each domain was selected by taking a variable which significantly discriminated the groups according to the univariate F test for mean differences and had the lowest correlation with the variable from that domain already in the model. This screen procedure resulted in the identification of the following list:

Test	First Variable	Second Variable
CRIS	Confidence	Self-Disclosure
JDI	Job in General	Pay
WAYS	Self-Controlling	Planful Problem Solving
JIS	Only one scale	

Using this set of potential predictor variables, a stepwise discriminant analysis was run with F-to-enter and F-to-delete set at .05. We desired a model where both the overall Wilks' lambda was statistically significant and each partial Wilks' lamba tested by it corresponding F-to-enter and F-to-delete was statistically significant. In terms of the classification rate, it is important to consider reducing the number of predictor variables because a "lower misclassification rate can sometimes be achieved by using fewer variables" (Hand, 1981, p. 121)

One stepwise discriminant function emerged from the analysis. The function consisted of the Job in General scale (JIG) and the CRIS scale, Confidence. The standardized discriminant function coefficients were .611 and .653 for JIG and Confidence, respectively.

Discussion

The worker's confidence (CRIS, Confidence) and the worker's views of the job in general (JIG) appear to be making equal contributions to differentiating the three burnout groups. Although many other variables differentiate the three burnout groups, (see Table with univariate F tests), the most parsimonious solution is only to consider these two variables. The cross validated classification percentage was 70.0. However, using the discriminant function had the intuitively unsatisfying result of classifying no one in group 2 (transitional burnout group).

From this study we can conclude that many variables can be used to identify differences in burnout groups (univariate F tests). We can further conclude that coping resources (as measured by the CRIS) appear to be more predictive of burnout than coping processes (as measured by the WAYS). Seven of the 12 CRIS scales distinguished between the burnout groups, whereas only one of the eight WAYS scales did so. Moreover, the CRIS scale, Confidence, along with the Job in General scale (JIG) were the only variables to enter the discriminant function for classifying membership in the three burnout groups. Thus, the belief that one has "money in the bank," that is, has resources upon which to draw, appears to be negatively related to job burnout. It may be that coping resources serve as buffers between work stress and burnout.

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Measures of Differences Among Three Overall Phase Groups
Coping Resources Inventory for Stress (CRIS)
Table 1

Coping Resources Inventory for Stress (CRIS) Scale	F	Probability	Effect Size
Self Disclosure	2.01	.133	0.05
Self Directedness	9.52	.000*	0.18
Confidence	12.78	.000*	0.23
Acceptance	5.55	.005*	0.11
Social Support	3.89	.024*	0.08
Financial Freedom	5.14	.008*	0.11
Physical Health	4.96	.009*	0.10
Physical Fitness	0.79	.457	0.02
Stress Monitoring	1.97	.145	0.04
Tension Control	2.29	.107	0.05
Structuring	2.15	.123	0.05
Problem Solving	3.99	.022*	0.08

Job Descriptive Index and Job in General Scale	F	Probability	Effect Size
Work on Present Job	5.98	.004*	0.13
Supervision	5.17	.008*	0.11
People on Your Present Job	8.93	.000*	0.18
Pay	1.32	.274	0.03
Opportunities for Promotion	7.93	.001*	0.16
Job in General	15.57	.000*	0.27

Ways of Coping Questionnaire Scale	F	Probability	Effect Size
Confrontive Coping	0.35	.703	0.01
Distancing	0.11	.898	0.00
Self-Controlling	0.71	.492	0.02
Seeking Social Support	1.88	.159	0.04
Accepting Responsibility	0.37	.693	0.01
Escape-Avoidance	2.00	.142	0.04
Planful Problem Solving	0.50	.607	0.01
Positive Reappraisal	4.53	.014*	0.10

Job Involvement Scale (JIS)	F	Probability	Effect Size
	8.66	.000*	0.17

*p < .05

Effect Size = 1 - λ

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